12/18/2007 2:46:17 PM
12/18/2007 4:52:49 PM

[File 2] INSPEC 1898-2006/Feb W3
[File 155] MEDLINE(R) 1951-2006/Feb 27
[File 5] Biosis Previews(R) 1969-2006/Feb W3
[File 6] NTIS 1964-2006/Feb W1 DSSSSSSS
[File 8] Ei Compendex(R) 1970-2006/Feb W3
[File 73] EMBASE 1974-2006/Feb 27
[File 95] TEME-Technology & Management 1989-2006/Feb W4
[File 35] Dissertation Abs Online 1861-2006/Feb
[File 144] Pascal 1973-2006/Feb W1
[File 99] Wilson Appl. Sci & Tech Abs 1983-2006/Jan
[File 34] SciSearch(R) Cited Ref Sci 1990-2006/Feb W3
[File 434] SciSearch(R) Cited Ref Sci 1974-1989/Dec
[File 65] Inside Conferences 1993-2006/Feb W4
[File 162] Global Health 1983-2006/Jan
[File 164] Allied & Complementary Medicine 1984-2006/Feb
[File 357] Derwent Biotech Res. _1982-2006/Feb W4
[File 23] CSA Technology Research Database 1963-2006/Feb
[File 60] ANTE: Abstracts in New Tech & Engineer 1966-2006/Feb
[File 294] ONTAP(R) SciSearch(R) Cited Ref Science
[File 256] TecInfoSource 82-2006/Feb (c) 2006 Info.Sources Inc
[File 987] TULSA (Petroleum Abs) 1965-2006/Feb W2
[File 105] AESIS 1851-2001/Jul
[File 103] Energy SciTec 1974-2006/Feb B2
[File 58] GeoArchive 1974-2005/Jun
[File 292] GEOBASE(TM) 1980-2006/Feb W4
[File 89] GeoRef 1785-2006/Feb B2
[File 239] Mathsci 1940-2006/Apr
[File 56] Computer and Information Systems Abstracts 1966-2006/Aug
[File 57] Electronics & Communications Abstracts 1966-2006/Aug

Set Items Description
S1 2942385 S MAGNETIC(2N)RESONA???? OR MRI OR MAGNETIC()RESONANCE()IMAG???? OR (MR OR M()R)(2N)IMAG???? OR (MAGNETIC OR PARALLEL)(2N)IMAG???? OR NMR OR NUCLEAR()MAGNETIC OR FTNMR OR FTMRI OR MAGNETORESONA???? OR PMR OR PROTON()MAGNETIC()RESONA???? OR PARAMAGNETIC(2N)RESONA???? OR MAGNETIC(2N)RELAX????? OR FERROMAGNETIC(2N)RESONA???? OR MAGNETIC(3N)SPECTRO??????? OR MRS OR MRSI OR MRA OR MAGNETIC()RESONANCE()ANGIOGRAPH???? OR CSI OR CHEMICAL()SHIFT()IMAG???? OR EPR OR ELECTRON()PARAMAGNETIC()RESONANCE OR FMRI OR FUNCTION???(2N)IMAG??? OR ESR OR ELECTRON()SPIN()RESONA??? OR SPIN(2N)RESONA???? OR NQR OR NUCLEAR(2N)RESONANCE

S2 1249399 S (MEASUR???? OR ANALY????? OR DETERMIN??????? OR ESTIMAT????? OR CALCULAT???? OR EVALUAT????)(3N)(CURRENT??? OR AMPLITUD??? OR PHAS????)

S3 989573 S (TRANSMI?????? OR RECEIV????? OR TRANSCEIV?????)(3N)(COIL???? OR ANTENNA??? OR WIRE??? OR WIRING OR MICROCOIL???? OR MICRO()COIL???? OR MICROSTRIP????? OR MICRO()STRIP????) OR COIL??? OR ANTENNA???

S4 257939 S CURRENT???(3N)(DETECT???? OR SENS???? OR TEST???? OR IDENTIF???????? OR RECOGNI???????? OR VERIF????????)

S5 435335 S (AMPLITUD???? OR PHAS????? OR SINE OR SINUSOID???? OR CYCLIC????)(3N)(VALUE???? OR NUMBER????? OR DATA OR INFORMATION OR INFO OR SIGNAL????)

S6 5902895 S (COMPAR????? OR CALIBRAT????? OR ADJUST????? OR CHANG????? OR RECALIBRAT???? OR RE()CALIBRAT???? OR RETUN???? OR REMATCH???? OR RE()TUNING OR RE()TUNED OR RE()MATCH????? OR COMPENSAT???? OR DIFFER????????????????? OR CORRECT????? OR REGULAT????? OR ALTER?????? OR REGULAT?????? OR MODULAT?????? OR VARY????? OR VARI?????????? OR RESET?????)(3N)(TRANSMI?????? OR TRANSCEIV??????? OR RECEIV?????? OR COIL???? OR ANTENNA???? OR MICROCOIL???? OR MICRO()COIL????? OR MICROSTRIP???? OR MICRO()STRIP???? OR VALUE???? OR NUMBER???? OR INFO OR INFORMATION OR DATA OR SIGNAL???? OR AMPLITUD???? OR PHAS???? OR SINE OR SINUSOID OR INPUT OR RF OR RADIOFREQUENC????? OR RADIO()FREQUENC?????)

S7 647809 S (SAME OR EQUAL???? OR EXACT????? OR MATCH????? OR IDENTICAL???? OR UNIFORM???? OR REQUIR?????? OR KNOWN)(3N)(VALUE???? OR NUMBER???? OR INITIAL???? OR ORIGINAL?????)

S8 887712 S (CARTESIAN OR ELECTRONIC???? OR RF OR RADIOFREQUENC????? OR RADIO()FREQUENC????? OR NEGATIVE OR ACTIV??????)(2N)(FEEDBACK????? OR FEED????()BACK????) OR FEEDBACK OR FEED???()BACK???

12/18/2007 2:46:17 PM
12/18/2007 4:52:49 PM

S9	2674510	S (AVOID?????? OR SUPPRES???? OR ATTENUAT???? OR ELIMINAT???? OR DECREAS????? OR REDN OR REDUC???? OR LOWER????? OR STOP???? OR HINDER???? OR MINIM?????? OR AMELIORAT????? OR PROHIBIT????? OR CANCEL???? OR PREVENT????? OR MITIGAT????? OR REMOV????? OR TERMINAT???)(3N)(DELETERIOUS OR EFFECT???? OR PROPAGAT???? OR INTERACT?????? OR CORRELAT????? OR DEFICIEN?????? OR DEFECT????? OR DISTURB????? OR ARTIFACT???? OR NOIS???? OR SOUND???? OR VIBRAT?????? OR INTERFER?????? OR CROSSTALK???? OR CROSS()TALK???? OR TRANSIENT????)
S10	43355	S CC=(A3240 OR A3325 OR A7600 OR A0758 OR A8760I OR B7510N)
S11	0	S S1 AND S2 AND S3 AND S4 AND S5 AND S6 AND S7 AND S8 AND S9
S12	0	S S1(3N)S2(3N)S6(3N)S8
S13	46	S S1 AND S2 AND S6 AND S8
S14	17	S S13 AND S3
S15	12	RD (unique items)
S16	0	S S13 AND S4
S17	4	S S13 AND S5
S18	4	RD (unique items)
S19	0	S S13 AND S7
S20	8	S S13 AND S9
S21	3	RD (unique items)
S22	1	S S13 AND S10
S23	4	S S1(3N)S5(3N)S6(3N)S8
S24	1	RD (unique items)
S25	663	S S1(3N)S5(3N)S6
S26	112	S S25 AND S2
S27	6	S S26 AND S3
S28	5	RD (unique items)
S29	1	S S26 AND S4
S30	1	S S26 AND S7
S31	0	S S26 AND S8
S32	10	S S26 AND S9
S33	7	RD (unique items)
S34	8	S S26 AND S10
S35	8	RD (unique items)
S36	218	S S1(3N)S6(3N)S9
S37	16	S S36 AND S2
S38	10	RD (unique items)
S39	20	S S36 AND S3
S40	11	RD (unique items)
S41	0	S S36 AND S4
S42	38	S S36 AND S5
S43	0	S S42 AND S7
S44	0	S S42 AND S8
S45	3	S S42 AND S10
S46	3	RD (unique items)
S47	54	S S1(3N)S6(3N)S8
S48	1	S S47 AND S2
S49	10	S S47 AND S3
S50	7	RD (unique items)
S51	0	S S47 AND S4
S52	5	S S47 AND S5
S53	2	RD (unique items)
S54	0	S S47 AND S7
S55	2	S S47 AND S9
S56	2	RD (unique items)
S57	3	S S47 AND S10
S58	3	RD (unique items)
S59	3	S S21 NOT S18
S60	0	S S22 NOT (S18 OR S21)
S61	1	S S24 NOT (S18 OR S21 OR S22)
S62	5	S S28 NOT (S18 OR S21 OR S22 OR S24)
S63	0	S S29 NOT (S18 OR S21 OR S22 OR S24 OR S28)
S64	0	S S30 NOT (S18 OR S21 OR S22 OR S24 OR S28 OR S29)
S65	6	S S33 NOT (S18 OR S21 OR S22 OR S24 OR S28 OR S29 OR S30)
S66	7	S S35 NOT (S18 OR S21 OR S22 OR S24 OR S28 OR S29 OR S30 OR S33)
S67	10	S S38 NOT (S18 OR S21 OR S22 OR S24 OR S28 OR S29 OR S30 OR S33 OR S35)

12/18/2007 2:46:17 PM
12/18/2007 4:52:49 PM

S68 10 S S40 NOT (S18 OR S21 OR S22 OR S24 OR S28 OR S29 OR S30 OR S33 OR S35 OR S38)

S69 3 S S46 NOT (S18 OR S21 OR S22 OR S24 OR S28 OR S29 OR S30 OR S33 OR S35 OR S38 OR S40)

S70 1 S S48 NOT (S18 OR S21 OR S22 OR S24 OR S28 OR S29 OR S30 OR S33 OR S35 OR S38 OR S40 OR S46)

S71 7 S S50 NOT (S18 OR S21 OR S22 OR S24 OR S28 OR S29 OR S30 OR S33 OR S35 OR S38 OR S40 OR S46 OR S48)

S72 1 S S53 NOT (S18 OR S21 OR S22 OR S24 OR S28 OR S29 OR S30 OR S33 OR S35 OR S38 OR S40 OR S46 OR S48 OR S50)

S73 2 S S56 NOT (S18 OR S21 OR S22 OR S24 OR S28 OR S29 OR S30 OR S33 OR S35 OR S38 OR S40 OR S46 OR S48 OR S50 OR S53)

S74 3 S S58 NOT (S18 OR S21 OR S22 OR S24 OR S28 OR S29 OR S30 OR S33 OR S35 OR S38 OR S40 OR S46 OR S48 OR S50 OR S53 OR S56)

S75 6 S S15 NOT (S18 OR S21 OR S22 OR S24 OR S28 OR S29 OR S30 OR S33 OR S35 OR S38 OR S40 OR S46 OR S48 OR S50 OR S53 OR S56 OR S58)

FOR YOUR INFORMATION

10/589136

18/9/4 (Item 1 from file: 987) Links
TULSA (Petroleum Abs)

0001256890 **Petroleum Abstract No:** 902307

TUNING OF NUCLEAR MAGNETIC RESONANCE LOGGING TOOLS

Author (Inventor): BORDON, E; HURLIMANN, M D; MINH, C C
Patent Assignee: SCHLUMBERGER TECHNOL CORP
Patent Information: U.S. 7,026,814B2, c. 4/11/2006, f. 12/19/2003 (Appl. 742,481) (G01V-0003/00). (23 pp; 55 claims)
Patent (Number Kind, Date): US 7026814 B2, 20060411
Application (Number, Date): US 742481, 20031219
2006
Publication Year: 2006
IPC Code: G01V-0003/00
Language: ENGLISH
Document Type: PATENT; P
Record Type: ABSTRACT
A method for tuning a **nuclear magnetic resonance** (**NMR**) tool having an operating frequency and equipped with an antenna is described comprising (1) transmitting a rf magnetic field to a sample under investigation; (2) receiving an **NMR** signal from the sample within a detection window; (3) determining mistuning of the antenna relative to said operating frequency; and (4) analyzing the received echo signal to determine mistuning of the received signal from the operating frequency. The mistuning of the received signals from the operating frequency may be determined by **analyzing** any **changes** in **phase** of the echo along the echo signal. The antenna tuning process may be automated by **measuring calibrated signal amplitudes** at more than one frequency and identifying a maximum amplitude. The system tuning may be maintained by repeating steps 1-4 while operating the tool and implementing a **feedback** loop.
Primary Descriptor: LOG CALIBRATION
Major Descriptors: CALIBRATION; DETECTOR; ELECTRICAL EQUIPMENT; ELECTRONIC EQUIPMENT; INSTRUMENT; **MAGNETIC RESONANCE**; **NUCLEAR** LOGGING; **NUCLEAR MAGNETIC** LOGGING; **NUCLEAR MAGNETIC RESONANCE**; REMOTE SENSOR; RESONANCE; SONDE; STANDARDIZATION; TRANSMITTER; WELL LOGGING
Minor Descriptors: (P) USA; ALGORITHM; ANTENNA; BLOCK DIAGRAM; CHART; DIAGRAM; ELECTROMAGNETIC WAVE; ENGLISH; EQUIPMENT LAYOUT; FLOW CHART; FORMATION EVALUATION; FREQUENCY; GRAPH; GRAPHICAL REPRESENTATION; INTERPRETATION; MATHEMATICAL ANALYSIS; MATHEMATICS; PATENT; PHYSICAL PROPERTY; RADIO WAVE; RECEIVER (ELECTRONIC); REMOTE SENSING; SCHLUMBERGER TECHNOL CORP; SINE WAVE; WAVE; WAVE FREQUENCY; WAVE PROPERTY; WAVEFORM; WAVELENGTH; WELL LOGGING & SURVEYING; WELL LOGGING EQUIPMENT; WELLBORE DIAGRAM
Subject Heading: WELL LOGGING & SURVEYING

59/9/1 (Item 1 from file: 2) Links

Fulltext available through: USPTO Full Text Retrieval Options USPTO Full Text Retrieval Options

INSPEC

05430631 **INSPEC Abstract Number:** A9315-0758-012, C9308-3380D-003

Title: Direct phase control-an alternative philosophy in NMR imaging

Author Shekhtman, B.S.

Author Affiliation: NPO VEGA-M, Moscow, Russia

Journal: Measurement Science & Technology vol.4, no.5 p. 566-70

Publication Date: May 1993 **Country of Publication:** UK

CODEN: MSTCEP **ISSN:** 0957-0233

U.S. Copyright Clearance Center Code: 0957-0233/93/050566+05$07.50

Language: English **Document Type:** Journal Paper (JP)

Treatment: Theoretical (T); Experimental (X)

Abstract: A method of **phase** angle control is **analysed** which uses the charge flowing through the gradient coil as the **feedback** signal in a closed loop system. A **reduced** influence of current **transients** and amplifier linearity upon the control accuracy is obtained due to integral **feedback**. (6 Refs)

Subfile: A C

Descriptors: closed loop systems; control system synthesis; **feedback**; **nuclear magnetic resonance imaging**; phase control

Identifiers: direct phase control; **NMR** imaging; phase angle control; gradient coil; **feedback** signal; closed loop system; current transients; amplifier linearity; accuracy; integral **feedback**

Class Codes: A0758 (Magnetic resonance spectrometers, auxiliary instruments and techniques); A0670T (Servo and control devices); C3380D (Physical instruments); C3110H (Phase and gain)

10/589136

62/9/2 (Item 1 from file: 35) **Links**

Dissertation Abs Online

02000674 ORDER NO: AADAA-I3123975

Two-dimensional spectral estimation techniques with applications to magnetic resonance spectroscopy

Author: Frigo, Frederick J.

Degree: Ph.D.

Year: 2004

Corporate Source/Institution: Marquette University (0116)

Adviser: James A. Heinen

Source: Volume 6502B of Dissertations Abstracts International.

PAGE 918 . 290 PAGES

Descriptors: ENGINEERING, ELECTRONICS AND ELECTRICAL ; ENGINEERING, BIOMEDICAL ; HEALTH SCIENCES, RADIOLOGY

Descriptor Codes: 0544; 0541; 0574

Single-voxel proton magnetic resonance spectroscopy (MRS) is typically used in a clinical setting to quantify metabolites in the human brain. By convention, an **MRS** absorption spectrum is created by Fourier transformation of **phase-corrected** raw **data** acquired during an **MRS** experiment. An **MRS** absorption spectrum shows the relative concentrations of certain key metabolites, including N-Acetyl-aspartate (NAA), choline, creatine and others. Certain nonparametric techniques may also be used for MRS analysis. 2D Capon and 2D **amplitude** and **phase estimation** (APES) are two relatively new nonparametric methods that can be used effectively to estimate both frequency and damping characteristics of each metabolite. In this dissertation we introduce the weighted 2D Capon, weighted 2D APES, and combined weighted 2D APES/2D Capon methods. Under certain conditions these methods may provide improved estimation properties and/or reduced computation time, as compared to conventional 2D methods.

Many clinicians routinely use multiple **receive coils** for magnetic resonance imaging (MRI) studies of the human brain. In conjunction with these exams, it is often desired to perform proton MRS experiments to quantify metabolites from a region of interest. An MRS absorption spectrum can be generated for each **coil** element; however, interpreting the results from each channel is a tedious process. Combining MRS absorption spectra obtained from an experiment in which multiple **receive coils** are used would greatly simplify clinical diagnosis. In this dissertation we introduce two methods for 2D spectral estimation in the case of multi-channel data. To date, no such methods have appeared in the literature. These new methods employ weighted signal averaging and weighted spectrum averaging and use any of the 2D techniques described above. We also introduce a method to optimally estimate the relative channel gains from observed data.

The new techniques developed in this dissertation are evaluated and compared to conventional 2D spectral estimation based on extensive computer simulations written in MATLAB. They are also applied to phantom and <italic>in vivo</italic> MRS data.

10/589136

62/9/3 (Item 2 from file: 35) **Links**

Dissertation Abs Online

01222712 ORDER NO: AAD92-16861

POSITION AND VELOCITY MEASUREMENT IN MAGNETIC RESONANCE IMAGING USING THE SPATIALLY INHOMOGENEOUS RECEPTION FIELDS OF LOCAL RF COILS

Author: CHRISTENSEN, JAMES DONALD

Degree: PH.D.
Year: 1992
Corporate Source/Institution: THE MEDICAL COLLEGE OF WISCONSIN (0495)
Adviser: JAMES S. HYDE
Source: Volume 5301B of Dissertations Abstracts International.
PAGE 156 . 162 PAGES
Descriptors: BIOPHYSICS, MEDICAL; ENGINEERING, BIOMEDICAL
Descriptor Codes: 0760; 0541

A new method is presented for measuring position and velocity in magnetic resonance imaging using the spatial phase variation of the reception fields of local RF **coils**. Multiple receiver **coils** have a spatially **varying phase difference** between them. When the **coils** are used as **NMR receivers**, the **phase difference** between **signals** equals the **phase difference** between the reception fields of the respective **coils**. The position of sample spins is **determined** from the **phase** difference between signals acquired using multiple **coils**, when the phase difference between **coils** is a known function of position. The velocity is determined from the change of position during a known time interval.

Multiple signals are acquired simultaneously using an array of intrinsically decoupled **receiver coils**. Phase errors, even those that change over time, are removed by subtracting signal phases, leaving the phase difference between the receivers, which provides the information for position and velocity determination.

The position and velocity of water within tubes were **determined** by **analyzing** the **phase** evolution over time of **NMR** signals. The position **calculated** from **phase differences** matched the **values** predicted by simulation of the **coils**' reception fields. The velocity of water flowing through tubes was measured at velocities ranging from 0 to 24 cm/sec. Phase errors resulting from eddy currents and main field inhomogeneity were eliminated, and the velocities **measured** from **phase** differences correlate well with values measured by timed collection.

The technique was extended to velocity imaging. The velocity of water flowing through tubes was accurately measured at various flow rates. Phase errors attributed to flow in the direction of static field gradients were eliminated.

Images of vessels in the neck of a healthy human volunteer were acquired simultaneously from multiple receivers at multiple points in the cardiac cycle. The velocity as a function of time within the cardiac cycle was determined for the jugular vein and compared with color Doppler ultrasound measurements. Severe phase artifacts were eliminated from multiple-**coil** phase differences, demonstrating the removal of transient phase errors. The temporal positions of peaks in the velocity waveform measured by MRI closely matched the peaks measured by Doppler ultrasound.